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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/687,703 | 10/20/2003 | Robert Scarano | 436.006 | 2842 |

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| EXAMINER | |
|---|---|
| HARPER, V PAUL | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2654 | |

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/687,703 | SCARANO ET AL. | |
| | Examiner | Art Unit | |
| | V. Paul Harper | 2654 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-30 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-30 is/are rejected.

7)☒ Claim(s) 30 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 01/23/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The Examiner has considered the references listed in the Information Disclosure Statement dated January 23, 2004. A copy of the Information Disclosure Statement is attached to this office action.

### *Claim Objections*

Claim 30 is objected to because of the following informalities: the phrase "SQL criteria for locating for spoken words" should be replaced with –SQL criteria for locating spoken words--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 2, 4, 8-11, 16, 17, 19, and 23-26 are rejected under 35 U.S.C. 102(a) as being anticipated by Clements et al. ("Phonetically Searching Applied to On-line Distance Learning Modules," IEEE DSP Workshop, October 13-16, 2002), hereinafter referred to as Clements.

Regarding claims 1 and 16, Clements teaches a phonetic searching technique that includes the following steps:

- defining a phrase to use for searching (p. 2, col. 2, ¶2);
- defining a minimum confidence level for searching (p. 3, col. 1, ¶'s 1 and 2, ignore results below 90% confidence) ;
- searching a set of audio segment for said phrase (p. 2, § High-Speed Phonetic Searching);
- producing a set of results of all occurrences of the phrase within the audio segments and the confidence that a given occurrence is a match for the search phrase (p. 3, col. 1, ¶'s 1 and 2, most likely candidates listed first).

Regarding claims 2 and 17, Clements teach everything claimed, as applied above (see claims 1 and 16, respectively). In addition, Clements teaches:

- said step of defining includes defining a plurality of phrases (p. 2, col. 2, ¶ 2, words or phrases),
- said step of searching includes searching said set of audio segments for said plurality of phrases (§ High-Speech Phonetic Searching),
- said step of producing includes producing a set of results of all occurrences of the plurality of phrases identified in a specified sequential order within the audio segments with said minimum confidence that a given occurrence within said audio segments is a match for a corresponding one of said plurality of search phrases (p. 2, ¶4 through p. 3, ¶2).

Regarding claims 4 and 19, Clements teach everything claimed, as applied above (see claims 1 and 16). In addition, Clements teaches the following:

- said step of defining includes defining a plurality of phrases (p. 2, col. 2, ¶2),
- said step of searching includes searching said set of audio segments for said plurality of phrases (§ High-Speech Phonetic Searching),
- said step of producing includes producing a set of results of all occurrences of the plurality of phrases identified in a specified temporal relationship within the audio segments with said minimum confidence that a given occurrence within said audio segments is a match for a corresponding one of said plurality of search phrases (p. 2, col. 2, temporal operators, p. 3, col. 1, ¶'s 1 and 2, § Integration Issues with *Infusion*).

Regarding claims 8 and 23, Clements teaches everything claimed, as applied above (see claims 1 and 16). In addition Clements teaches:

- said step of defining includes defining a plurality of phrases (p. 2, col. 2, ¶2),,
- said step of searching includes searching said set of audio segments for said plurality of phrases (§ High-Speed Phonetic Searching),
- and said step of producing includes producing a set of results of all occurrences of the plurality of phrases identified in a specified temporal relationship within the audio segments with said minimum confidence that a given occurrence within said audio segments is a match for a corresponding one of said plurality of search phrases (p. 2, col. 2, temporal operators, p. 3, col. 1, *Confidence_Level,* § Integration Issues with *Infusion).*

Regarding claims 9 and 24, Clements teaches everything claimed, as applied above (see claims 8 and 23). In addition, Clements teaches "said temporal relationship is with respect to said phrases" (p. 2, col. 2, representing two phrases spoken within 5 seconds of each other).

Regarding claims 11 and 26, Clements teaches everything claimed, as applied above (see claims 1 and 16). Clements also teaches "the step of identifying said set of audio segments" (§ High-Speed Phonetic Searching, ¶'s 1 and 2, process the input speech producing the phonetic search track), §Integration Issues with *Infusion*).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3, 5, 6, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clements in view of Frakes et al. ("Information Retrieval, Data Structures & Algorithms," Prentice Hall, 1992), hereinafter referred to as Frakes.

Regarding claims 3 and 18, Clements teach everything claimed, as applied above (see claims 1 and 16). In addition, Clements teaches:

- said step of defining includes defining a plurality of phrases (p. 2, col. 2, ¶2),

- said step of searching includes searching said set of audio segments for said plurality of phrases (§ High-Speed Phonetic Searching),
- and said step of producing includes producing a set of results of all audio segments including (i) at least one occurrence of a selected required one of the plurality of phrases (p. 3, col. 1, ¶'s 1 and 2).

Clements teaches the use of Boolean operations for queries (abstract), but Clements does not specifically teach "(ii) non-occurrences of at least one selected forbidden one of said plurality of phrases to be excluded from within the audio segments, said occurrence and non-occurrence determined with respect to said minimum confidence that a given occurrence within said audio segments is a match for a corresponding one of said plurality of search phrases." However, the examiner contends that this concept was well known in the art, as taught by Frakes.

In the same field of endeavor, Frakes teaches basic techniques of information retrieval. Frakes' teachings include the use of the Boolean expression "not information" to find documents that do not contain information (p. 266), which correspond to "selected forbidden one of said plurality of phrases."

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Clements by specifically providing the "not" Boolean operator, as taught by Frakes, since it was well-know in the art that such an operation is useful during information retrieval tasks (Frakes is a textbook published in 1992 with widely known techniques).

Regarding claims 5 and 20, Clements teaches everything claimed, as applied above (see claims 1 and 16). In addition, Clements teaches the following:

- said step of defining includes defining a plurality of phrases (p. 2, col. 2, ¶2),
- said step of searching includes searching said set of audio segments for said plurality of phrases (§ High-Speed Phonetic Searching),

Clements also teaches the use of Boolean operations for queries (abstract) and the use of temporal operators (p. 2, col. 2, ¶2), but Clements does not specifically teach "said step of producing includes producing a set of results of all audio segments lacking occurrences of the plurality of phrases identified in a specified temporal relationship within the audio segments with said minimum confidence that a given occurrence within said audio segments is a match for a corresponding one of said plurality of search phrases." However, the examiner contends that this concept was well known in the art, as taught by Frakes.

In the same field of endeavor, Frakes teaches basic techniques of information retrieval. Frakes' teachings include the use of the Boolean expression "not information" to find documents that do not contain information (p. 266), which correspond to "selected forbidden one of said plurality of phrases."

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Clements by specifically providing the "not" Boolean operator, as taught by Frakes, since it was well-know in the art that such an operation is useful during information retrieval tasks (Frakes is a textbook published in 1992 with widely known techniques).

Regarding claims 6 and 21, Clements in view of Frakes teaches everything claimed, as applied above (see claims 5 and 20). In addition, Clements teaches "said temporal relationship is with respect to said phrases" (p. 2, col. 2, ¶2, representing two phrases spoken within 5 seconds of each other).

4. Claims 7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clements in view of Frakes and further in view of Li et al. ("MOQL: A Multimedia Object Query Language," Third International Workshop on Multimedia Information Systems, Como, Italy, Sept. 1996), hereinafter referred to as Li.

Regarding claims 7 and 22, Clements in view of Frakes teaches everything claimed, as applied above (see claims 5 and 20). In addition, Clements teaches the use of temporal operators, but Clements does not specifically teach "said temporal relationship is with respect to said audio segment." However, the examiner contends that this concept was well known in the art, as taught by Li.

In the same field of endeavor, Li teaches the use of a multimedia object query language that includes the use of temporal functions. Li's teachings include a discussion of an anchored specification of time (i.e., a the temporal relationship is with respect to the segment) (§3.2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Clements in view of Frakes , as taught by Li, since this type of temporal operator supports typical multimedia queries (§3.2).

5. Claims 10 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clements in view in view of Li.

Regarding claims 10 and 25, Clements teaches everything claimed, as applied above (see claims 8 and 23). In addition, Clements teaches the use of temporal operators, but Clements does not specifically teach "said temporal relationship is with respect to said audio segment." However, the examiner contends that this concept was well known in the art, as taught by Li.

In the same field of endeavor, Li teaches the use of a multimedia object query language that includes the use of temporal functions. Li's teachings include a discussion of an anchored specification of time (i.e., a the temporal relationship is with respect to the segment) (§3.2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Clements, as taught by Li, since this type of temporal operator supports typical multimedia queries (§3.2).

6. Claims 12, 13, 14, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clements in view of Glowny et al. (U.S. Patent Application Publication 2001/0040942 A1), hereinafter referred to as Glowny.

Regarding claim 12, Clements teaches everything claimed, as applied above (see claims 11). But Clements does not specifically teach "said step of identifying is

responsive to intrinsic data." However, the examiner contends that this concept was well known in the art, as taught by Glowny.

In the same field of endeavor, Glowny discloses a method for recording and storing telephone call information. Glowny also teaches the use of additional data (i.e., intrinsic data) along with the voice recordings (¶ 0003).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Clements by specifically providing additional data along with recording, as taught by Glowny, since addition information associated with a voice file can aid in searching (¶ 0003).

Regarding claims 13 and 27, Clements teaches everything claimed, as applied above (see claims 11 and 26), but Clements does not specifically teach "said step of identifying is response to CTI data." However, the examiner contends that this concept was well known in the art, as taught by Glowny.

In the same field of endeavor, discloses a method for recording and storing telephone call information. Glowny also teaches the use of additional CTI data along with the voice recordings (¶ 0003).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Clements by specifically providing additional data along with recording, as taught by Glowny, since addition information associated with a voice file can aid in searching (¶ 0003).

Regarding claims 14 and 28, Clements in view of Glowny teaches everything claimed, as applied above (see claims 13 and 27). But Clements does not specifically teach "said CTI data selected from the set consisting of (i) called number (DNIS) and, calling number (AN1), and (iii) Agent ID." However, the examiner contends that this concept was well known in the art, as taught by Glowny.

Glowny further discloses the use of telephone number, caller ID and agent ID number (¶ 0003).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Clements by specifically providing additional data along with recording, as taught by Glowny, since addition information associated with a voice file can aid in searching (¶ 0003).

7. Claims 15, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glowny in view of Clements.

Regarding claim 15, Glowny teaches a method for recording and storing telephone call information. Glowny's method includes the following steps:

- connecting a plurality of calls to at least one customer service representative (Fig. 1, items 130 and 160, Fig. 2, items 100, 230, ¶'s 0035 through 0037);
- recording audio segments from each of said plurality of calls (Fig. 1, item 145, Fig. 2, item 180, ¶ 0037). In addition, Glown teaches search and retrieval of recoded information (¶'s 0003 and 0009), but Glowny does not specifically teach the following steps:

a) defining a phrase to use for searching;

b) defining a minimum confidence level for searching;

c) searching said set of audio segment for said phrase; and

d) producing a set of results of all occurrences of the phrase within the audio segments and the confidence that a given occurrence is a match for the search phrase.

However, the examiner contends that steps a) through d) were well known in the art, as taught by Clements.

In the same field of endeavor, Clements teaches a phonetic searching technique that includes steps a) through d), see rejection of claim 1, above.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Glowny by specifically providing the steps a) through d), as taught by Clements, since such an approach is an efficient and high-speed technique for locating audio information (Clements, p. 1, Introduction ¶1, and p. 2, High-Speed Phonetic Searching, ¶1).

Regarding claim 29, Glowny discloses a contact center that includes the following:

- a switch configured to connect each of a plurality of calls to a customer service representative workstation (Fig. 2, items 100 and 230, ¶ 0035);
- a memory connected to said switch and configured to record audio segments from each of said plurality of calls (Fig. 1, item 145, Fig. 2, item 180).

Glowny also teaches the use of a workstation (supervisory terminal) that can browse (search) the recorded information (Fig. 1, item 160, ¶ 0047), but Glowny does not specifically teach the following features:

a) a supervisory terminal configured to define a phrase to use for searching and a minimum confidence level for searching ¶ 0047;

b) a search engine connected to said supervisory terminal and to said memory for searching said set of audio segment for said phrase; and

c) a display connected to said search engine and configured to produce a set of results of all occurrences of the phrase within the audio segments and the confidence that a given occurrence is a match for the search phrase.

However, the examiner contends that steps a) through c) were well known in the art, as taught by Clements.

In the same field of endeavor, Clements teaches a phonetic searching technique that includes the following: a) the ability to define a search phrase and a confidence level (p. 2, col. 2, ¶2; p. 3, col. 1, ¶'s 1 and 2); b) a search engine with necessary memory to perform a search (§ High-Speed Phonetic Searching); and c) a necessary display for displaying results (p. 3, ¶'s 1 and 2, enumerated results).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Glowny by specifically providing the steps a) through c), as taught by Clements, since such an approach is an efficient and high-speed technique for locating audio information (Clements, p. 1, Introduction ¶1, and p. 2, High-Speed Phonetic Searching, ¶1).

Regarding claim 30, Glowny discloses a method for recording and storing telephone call information includes the following:

- storing an audio segment in a speech repository (Fig. 1, items 145 and 140, ¶0037);
- storing information regarding the audio segment in a database (Fig. 1, item 155, ¶0037).

In addition, Glowny teaches the search and retrieval of the information stored in a database (¶0032) using techniques that are compatible with SQL (¶0225), which corresponds to "establishing a search criteria including speech and SQL criteria for locating spoken words or phrases...",but Glowny does not specifically teach the following:

a) ... for locating spoken words or phrases in said audio segment using speech recognition technology;

b) searching said audio segment and said database in accordance with said search criteria;

c) providing a report based on said search.

However, the examiner contends that steps a) through c) were well known in the art, as taught by Clements.

In the same field of endeavor, Clements teaches a phonetic searching technique that includes the following: a) the ability to search for spoken phrases using speech recognition techniques (p. 2, col. 2, ¶'s 1 and 2); b) a search engine (§ High-Speed

Phonetic Searching); and c) a necessary report for displaying results (p. 3, ¶'s 1 and 2, enumerated results).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Glowny by specifically providing the steps a) through c), as taught by Clements, since such an approach is an efficient and high-speed technique for locating audio information (see p. 1, Introduction ¶1, and p. 2, High-Speed Phonetic Searching, ¶1).

### *Citation of Pertinent Art*

8. The following prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- Kanevsky et al. (U.S. Patent 6,434,520) teach a method for indexing and querying audio archives.
- Petkovic et al. (U.S. Patent 6,185,527) teach a method for automatic audio content analysis for word spotting, indexing, classification and retrieval.
- Wilmot et al. (U.S. Patent Application Publication 2002/0147592 A1) teach a method for searching recorded speech and retrieving relevant segments.

### *Conclusion*

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive
Arlington, VA.
Sixth Floor (Receptionist)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. V. Paul Harper whose telephone number is (703) 305-4197. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645. The fax phone number for the Technology Center 2600 is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service office whose telephone number is (703) 306-0377.

V. Paul Harper

VPH/vph
July 12, 2004

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER